

Work Order ID 51938

Wednesday, September 09, 2009 3:27:41 PM



Page 1

Item ID: D206-667-103

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd

Start Date: 9/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 9/30/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

PL me

Date:

09-9-09

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D206-667-143

Rev C

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-103 CHG004

[Handwritten signature]

HA for BG 09/10/10

110

0.00



Packaging

Packaging

Memo

0.00

Packaging

120

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-143 using CNC bender program 206 B-fw and Folio FT

(K) Q MB 09-10-05

Work Order ID 51938

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Cust Item ID:

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00

27 Sep 10/05



QC

Memo

0.00



Quality Control

140

Crosstubes

0.00



Crosstubes

Memo

0.00

Crosstubes

1-Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes. □3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins. □4-Drill pilot holes using dr

MS
09-10-06

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

1 - AM 9-10-07

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Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC3- Inspect Part Finish

0.00

228 09/16/08



QC

Memo

0.00

Quality Control

④

/

170

QC5- Inspect part completeness to step on W/O

0.00

228 09/16/08



QC

Memo

0.00

Quality Control

④

/

180

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

CROSSTUBES

P/D: 10557

CZ

09/10/09 ①

Work Order ID 51938

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

190



Packaging

Packaging

0.00

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

09/10/09 (u)

200



QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

ml 09 10 13 (1)

210



SprayPaint

SprayPaint

0.00

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2 ☐ 2-Paint outside
crosstube with White Imron as per QSI 005 4.2 ☐ PRIME: ☐ Start
Time: 4:45 ☐ Finish Time: 10:30 ☐ PAINT: ☐ Start
Time: 2:30 ☐ Finish Time: 3:30

ml 09 10 13 (1)

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Item ID: D206-667-103

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

220

QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

RT 09 - 10 - 14

230

Crosstubes

0.00



Crosstubes

Memo

0.00

Crosstubes

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (2) Aft holes should be facing up. □ A/R Magnobond 6398 : 111249 exp 02/2010
Install supports and clamps as Torque: m 09 10 15 ①

m 09 10 14 ①

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

2) 507615

② f

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Item ID: D206-667-103

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Start Date: 9/11/2009 Start Qty: 1.00

Required Date: 9/30/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

250

Pick Kit

0.00

Packaging

Memo

0.00

Packaging

260

QC4- 100% Inspect kits for completeness

0.00

QC

Memo

0.00

Quality Control

270

Packaging

0.00

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206 667-103 □ Location: _____ □ PPP Rev: 019/10/15 (L)1 05.10.169/10/16 QD SA

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Item ID: D206-667-103

Accept

Revision ID: C

Item Name: Crosstube Fwd

Start Date: 9/11/2009 Start Qty: 1.00

Required Date: 9/30/2009 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/10/16

PL 09-10-16

Picklist Print

Page 1

Wednesday, September 09, 2009 3:27:48 PM

Work Order ID: 51938

Parent Item: D206-667-103RevC

Parent Item Name: Crosstube Fwd

Comments:

Start Date: 9/11/2009

Required Date: 9/30/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN970-4 Washer		Purchased	No			100	Each	47.0000	12.0000			
-------------------	--	-----------	----	--	--	-----	------	---------	---------	--	--	--

m/12799 *9/10/10*

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

47

104885

3

107242

3

107715

1

108077

2

108377

19

111724

3

112082

16

D206-667-
103TRNRevC

Manufactured No

230

Each

2.0000

1.0000

Crosstube Turning DetailL

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FG

2

48461

1

48463

1

9-10-5

Picklist Print

Page 2

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Work Order ID: 51938



Parent Item: D206-667-103RevC



Parent Item Name: Crosstube Fwd

Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2873-043RevA		Manufactured	No			230	Each	53.0000	2.0000			

Nut Plate Assembly

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	53	
45370	18	
45422	15	
50002	20	

ml 09 10 15

D2873-045RevA

Manufactured

No

230

Each

71.0000

2.0000



Nut Plate Assembly

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	71	
45210	11	
46772	20	
50001	40	

ml 09 10 15

Picklist Print

Page 3

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Work Order ID: 51938

Parent Item: D206-667-103RevC

Parent Item Name: Crosstube Fwd

Comments:

Start Date: 9/11/2009

Required Date: 9/30/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2891-1RevA1		Manufactured	No			230	Each	81.0000	2.0000			
2.25 Support												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

81

40336

1

41198

16

43880

20

45935

4

46159

20

50952

20

ml 091014

MS21920-20

Purchased

No

230

Each

156.3000

4.0000

Clamp (per MIL-DTL-8783C)

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

156.3

103478

2

106484

12

109269

9.3

110536

10

111281

34

112307

50

112624

39

ml 091014

Picklist Print

Page 4

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Parent Item: D206-667-103RevC



Parent Item Name: Crosstube Fwd


Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN5-30A  BOLT		Purchased	No			260	Each	85.0000	4.0000			

Warehouse

Loc Qty

Loc Code

Location


Main Warehouse

ST

85

110467

85

AN5-32A

Bolt

Purchased

No

260

Each

79.0000

4.0000



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

79

106242

3

106519

4

110363

17

111916

5

112082

50

11/10/09

11/12/09

Picklist Print

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Parent Item: D206-667-103RevC



Parent Item Name: Crosstube Fwd

Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ AN5-7A S		Purchased	No			260	Each	81.0000	10.0000			
Bolt												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST	81	
110625	7	
111668	24	
112612	50	

M111668

✓ AN960JD516



Washer

Purchased

No

260

Each

1,202.000

18.0000



M112794

09/10/08

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST	1202	
100564	2	
106167	6	
107534	34	
107959	43	
108246	46	
108672	2	
109059	49	
109752	22	
110363	46	
110523	57	
111279	43	
112082	352	
112314	500	

Picklist Print

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Parent Item: D206-667-103RevC



Parent Item Name: Crosstube Fwd

Start Date: 9/11/2009

Required Date: 9/30/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS20601-AD4W8		Purchased	No			260	Each	328.0000	14.0000			
RIVET												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	328	
108521	100	
110399	28	
112203	200	

m/ 09 10 15

MS21042LS

Purchased

No

260

Each

1,311.000 4.0000



Nut

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	1311	
110382	10	
111636	301	
112314	1000	

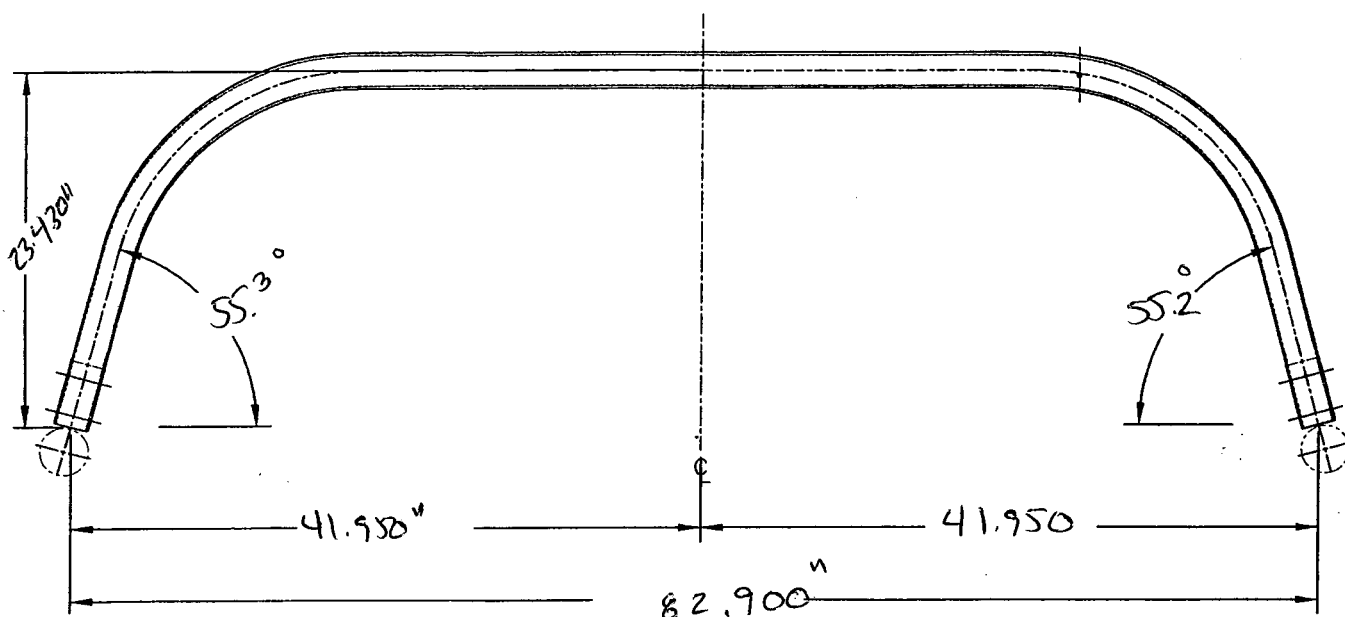
m/11636

P-4/10/15 (1)

DART AEROSPACE LTD		Work Order:	51938
Description: Crosstube High Fwd (206L)		Part Number:	D206-667-103
Inspection Dwg: D206-667-143 Rev: C		Page 1 of 1	

23.39 *op 6.10.05*

Required Dimension	Min	Max
Height	39.00	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10



Comments

QC15 Inspection	<i>S</i>
Date	09/10/05

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 51938

RELEASED
08/11/06

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN	RF		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.11.06		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D206-667-143	REV. C SHEET 1 OF 4
TITLE CROSSTUBE ASS'Y (206L HIGH FWD)	SCALE NTS
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8 7 6 5 4 3 2 1

D

C

B

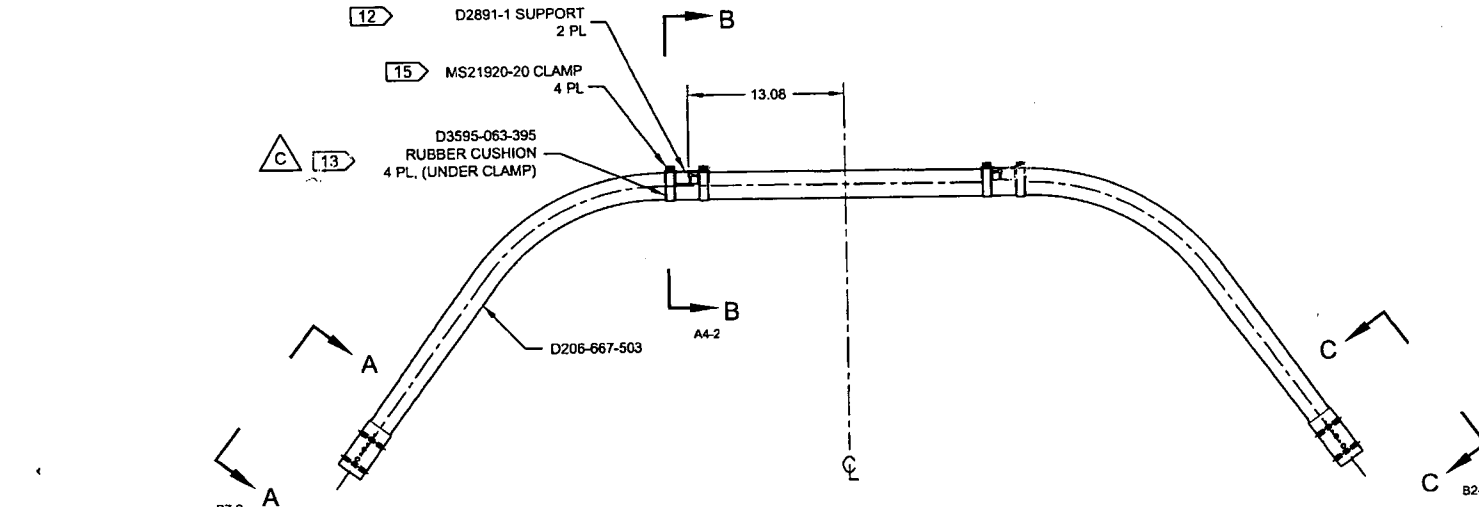
A

D

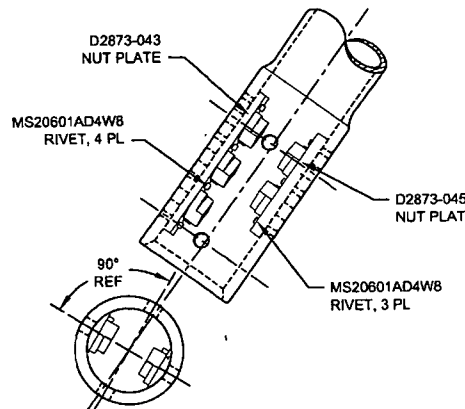
C

B

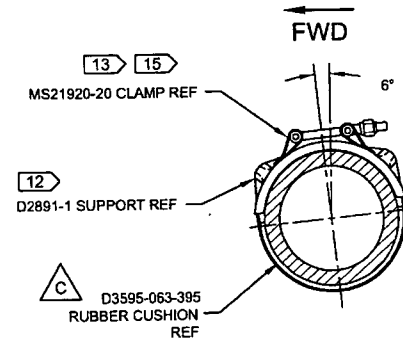
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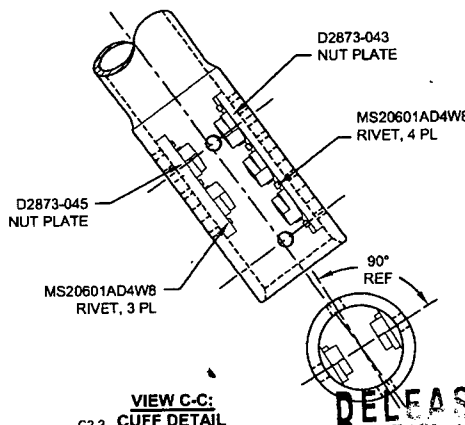
D206-667-143
ASSEMBLY DETAIL
(VIEW LOOKING FWD)



VIEW A-A:
CUFF DETAIL
SCALE 4X



SECTION B-B
SCALE 5X



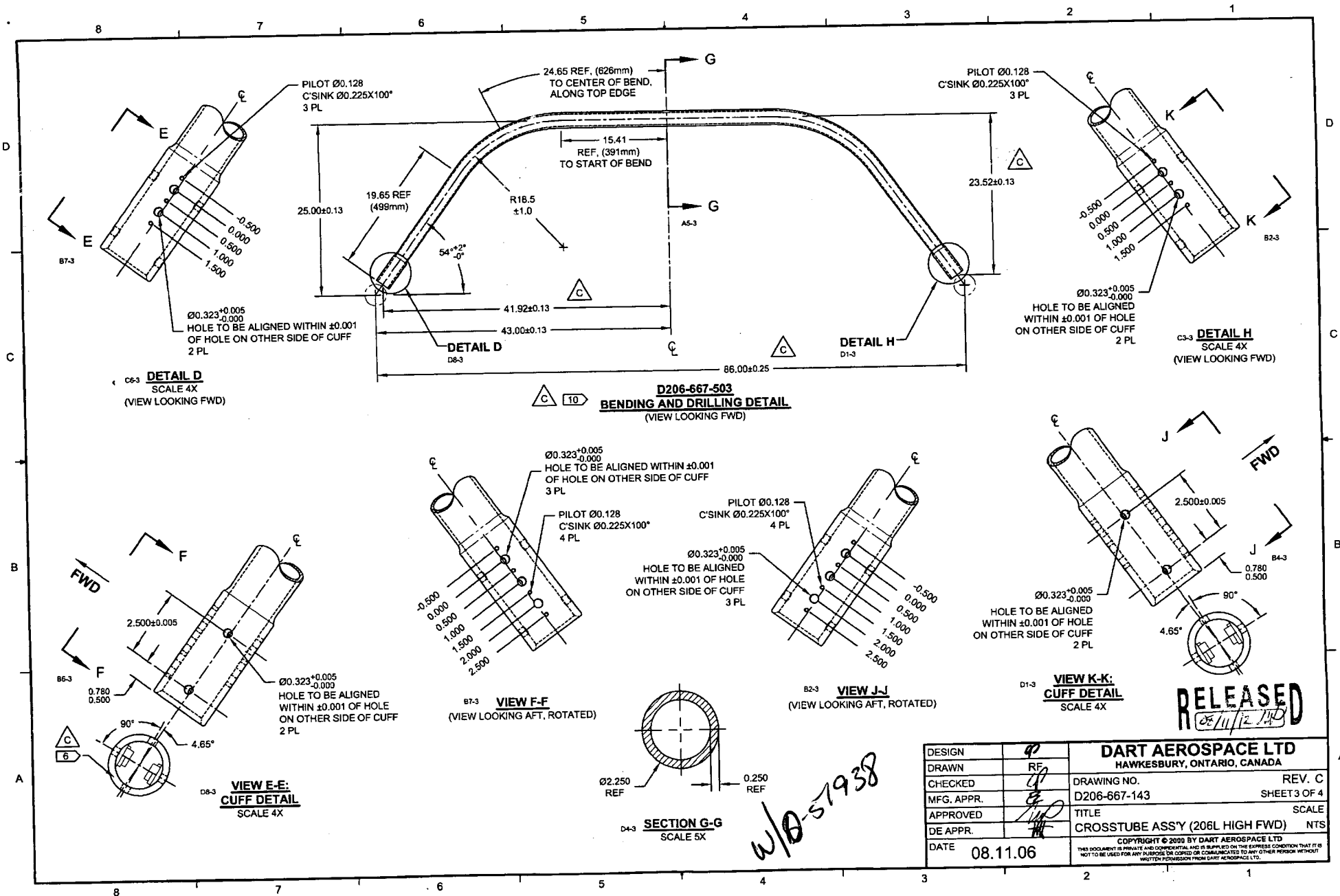
VIEW C-C:
CUFF DETAIL
SCALE 4X

RELEASED
08/11/12

W/O-57938

DESIGN	47	DART AEROSPACE LTD	
DRAWN	RE	HAWKESBURY, ONTARIO, CANADA	
CHECKED	47	DRAWING NO.	REV. C
MFG. APPR.	47	D206-667-143	SHEET 2 OF 4
APPROVED	47	TITLE	SCALE
DE APPR.	47	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
DATE	08.11.06	<small>COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1



B

7

6

5

4

3

2

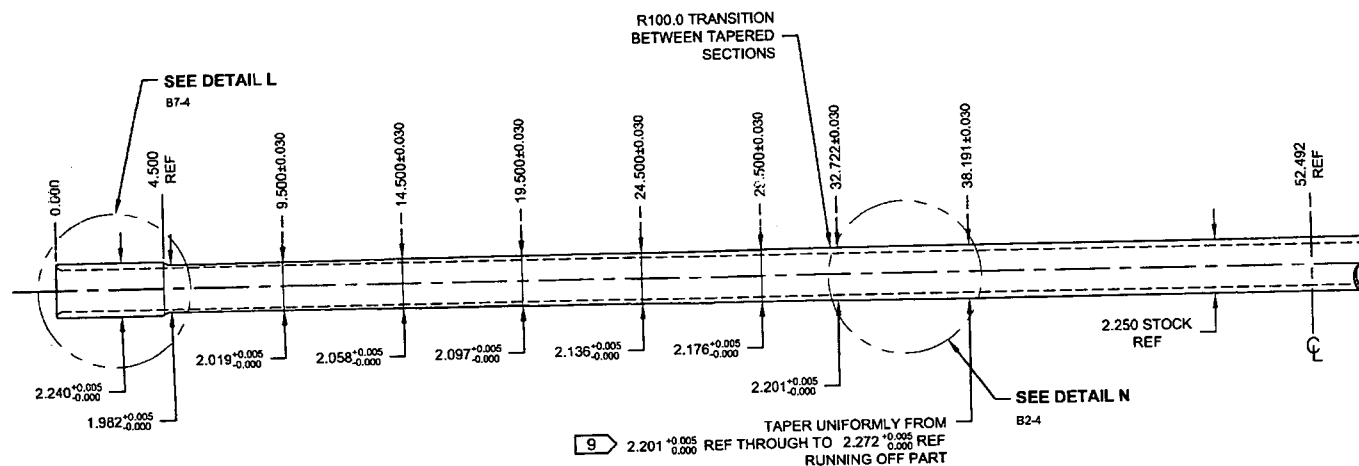
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D

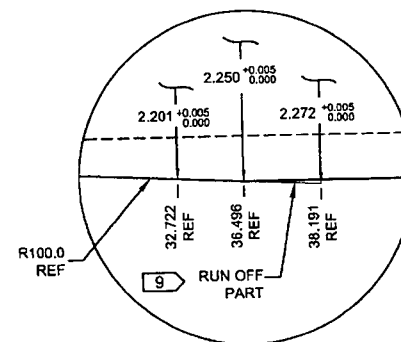
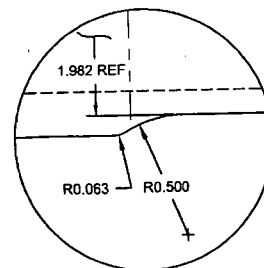
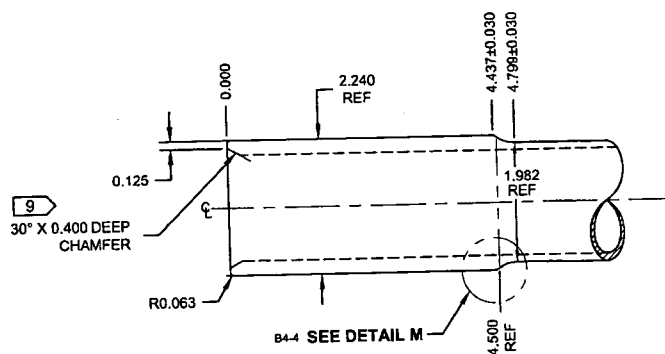
C

B

A



C TURNING DETAIL



RELEASED

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. C
MFG. APPR.	9	D206-667-143	SHEET 4 OF 4
APPROVED	9	TITLE	SCALE
DE APPR.	9	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2006 BY DART AEROSPACE LTD	
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w/b-51938

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D206-667 REV. C
AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D206-667 REV. 2

REF CANADIAN STC: SH01-5
REF FAA STC: SR01304NY
REF EASA STC: EASA.IM.R.S.01179

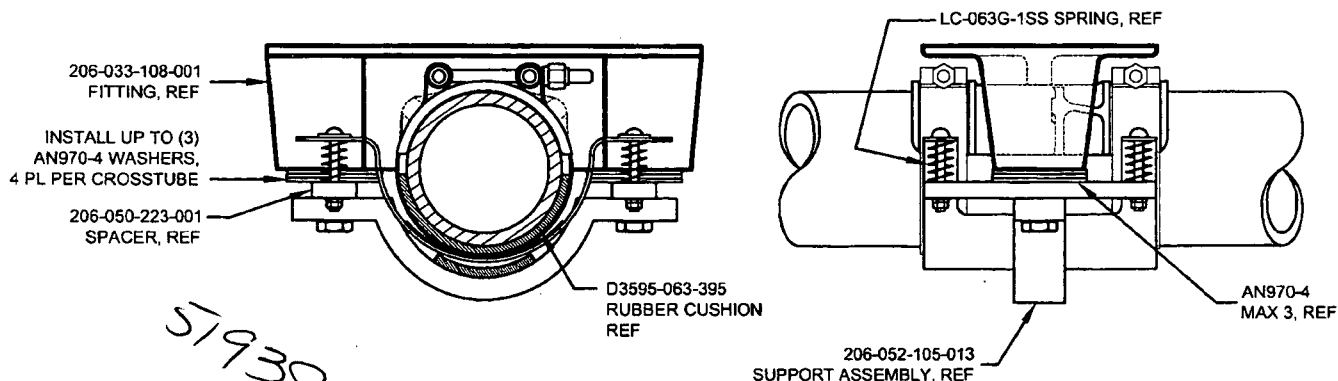
REFERENCE ONLY

PROBLEM:

FOR D206-667-103 CROSSTUBES (206L FWD) AT CHG 003 AND SUBSEQUENT (SEE DSI 9415) PROPER INSTALLATION OF THE OEM SUPPORT ASSEMBLIES MAY BE IMPOSSIBLE DUE TO THE ADDITIONAL THICKNESS OF THE DART D3595-063-395 RUBBER CUSHIONS. THE 206-052-105-013 SUPPORT ASSEMBLY (OR EQUIVALENT) MAY SIT TOO HIGH RELATIVE TO THE 206-033-108-001 FITTING, CAUSING THE LC-063G-1SS SPRING (OR EQUIVALENT) TO BE OVERLY COMPRESSED.

SOLUTION:

IT IS ACCEPTABLE TO LOWER THE SUPPORT ASSEMBLY BY INSTALLING UP TO QTY (3) AN970-4 WASHERS BETWEEN THE 206-033-108-001 FITTING (OR EQUIVALENT) AND THE 206-050-223-001 SPACER (OR EQUIVALENT). SEE FIGURE BELOW FOR REFERENCE.



CROSSTUBE SECTION: SUPPORT DETAIL

PARTS LIST:

THE FOLLOWING PARTS HAVE BEEN INCLUDED WITH D206-667-103 CROSSTUBES AT CHG 004 AND SUBSEQUENT

ITEM	Qty -103	PART NUMBER	DESCRIPTION
60	12	AN970-4	WASHER

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 08.12.17
CERT. NO.: SH01-5
ISSUE NO.: 3

A	NEW ISSUE	CP	08.12.17
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>qp</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>qp</i>		
CHECKED	<i>PH</i>	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9439	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	206L FWD XTUBE SUPPORT MOD.	NTS
DATE	08.12.17	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

5.0 PARTS LIST

Item	Qty -011	Qty -013	Qty -015	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X									D206-667-011	SPACER BLOCK KIT
		X								D206-667-013	NUT PLATE KIT (-101/-103/-105/-203/-205)
			X							D206-667-015	NUT PLATE KIT (-201)
				X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
					X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
						X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
							X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
								X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
									X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1				1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2					1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3						1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4							1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5								1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6									1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10				*2	*2	*2		*2		D2891-1	SUPPORT
11							*2			D2892-1	SUPPORT
12									*1	D2894-1	SUPPORT
13				*2	*2	*2		*2		D2856-400-694	ABRASION STRIP
14							*2		*2	D2856-400-773	ABRASION STRIP
15									*1	D2856-600-851	ABRASION STRIP
16				*4	*4	*4		*4		MS21920-20	CLAMP
17							*4		*4	MS21920-22	CLAMP
18									*2	MS21920-24	CLAMP
19				4	4	4		4		AN5-32A	BOLT
20							4		4	AN5-34A	BOLT
21				4	4	4	4	4	4	MS21042L5	NUT (OR MS21042-5)
22				8	8	8	8	8	8	AN960JD516	WASHER
23									*2	D3190-1	CHAFING SHIELD
30	8									AN4-6A	BOLT
31	8									AN4-7A	BOLT
32	16									AN960JD416	WASHER
33	2									D3193-041	SPACER BLOCK ASSEMBLY
40		2		*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41		2		*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42			2		2					D2872-043	NUT PLATE
43			2		2					D2872-045	NUT PLATE
44		10		10		10				AN5-7A	BOLT
45		10	10		10		10	10	10	AN5-10A	BOLT
46		4	4	4	10	4		4		AN5-30A	BOLT
47		4					4		4	AN5-32A	BOLT
48		18	18	10	12	10	10	10	10	AN960JD516	WASHER
49		4	4		6					MS21042L5	NUT (OR MS21042-5)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/241/143/243, & D407-667-145/245 ASSEMBLIES ABOVE

51938

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Revision: C

Date: 05.07.26



LIQUID PENETRANT TEST REPORT

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PAGE 1 OF

CLIENT DART AEROSPACE DATE Oct-8-2009 TIME AM ☒ P
ATTENTION LINDA/CHANTEL ACUREN JOB NO. 188-08-001567
ADDRESS 1270 46th DEEP ST, HAWKESBURY PO/NO. - 10557
ON. K6H 1K7 WORK LOCATION SAME
ACCEPTANCE STD. ASST 1417 REV./DATE 200
PROJECT F.P.I. on CROSS TUBES AND MACHINED PARTS
ITEM(S) EXAMINED 10 CROSS TUBES
13 MACHINED PARTS

JOB DESCRIPTION PROCEDURE NO. LT- REV./DATE TECHNIQUE NO. LT- REV./DATE
PART NO. STAINLESS STEEL MATERIAL ALUMINUM THICKNESS N/A
SCOPE WET FLUORESCENT LIQUID PENETRANT INSPECTION
CARRIED OUT 100% EXTERNAL

TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMUL
FAMILY BRAND MASNA FLUX BLACK LIGHT S/N 16459 ☐ OUTPUT > 1000 μ W/cm² ☐ AMBIENT <
PENETRANT 2L-67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ 5
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER LABINO
DEVELOPER SKD 52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N CAL DUE DATE
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE ME
SURFACE TEMPERATURE ☐ < - 4°C/ 20°F ☐ - 4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ☒ METRIC ☐ IMPERIAL

1 - W.O. 51939 - CROSS TUBE X
1 - W.O. 51940 - CROSS TUBE /
1 - W.O. 52054 - CROSS TUBE /
1 - W.O. 52055 - CROSS TUBE /
~~1 - W.O. 51297 - CROSS TUBE~~ /
1 - W.O. 51937 - CROSS TUBE /
1 - W.O. 51938 - CROSS TUBE /
1 - W.O. 52052 - CROSS TUBE /
1 - W.O. 52053 - CROSS TUBE /
1 - W.O. 50982 - CROSS TUBE /
1 - W.O. 50983 - CROSS TUBE /
13 - W.O. 51297 - STUDS /

ALL PARTS EXAMINED. HAVE
BEEN FOUND ACCEPTABLE
TO STANDARD.

09 10 13

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, express or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE MATTHEW MURDOCH SIGNATURE Matthew Murdoch DTR# E-27843
TECHNICIAN (SIGNATURE): Mike Johnston REPORT REVIEWED BY:
NAME (PRINT): Mike Johnston NAME INIT
1ST TECHNICIAN 2ND TECHNICIAN
CGSB LEVEL 2 SNT LEVEL 2 CGSB LEVEL SNT LEVEL
CGSB REG. NO. 6066 CGSB REG. NO.